

Z88 EPROM

September/October 1989

Vol. 3 No. 5

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The Z88 Users' Club Magazine

Club Addresses

All articles for **Z88 EPROM** and any other correspondence (**except** Software Library) should be sent to:

Z88 USERS' CLUB

68 WELLINGTON STREET

LONG EATON

NOTTINGHAM

NG10 4NG

All requests for software from the Club Software Library, (**but not** special offers), items for inclusion in the Library, and EPROMs for erasure should be sent to:

THE SOFTWARE LIBRARY

Z88 USERS' CLUB

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GU1 3PL

ALWAYS include your Membership Number with any correspondence. This is not just to be awkward - now the Club is growing it can be very time-consuming searching the database for a member's number. Your number is printed on the address label of each issue of **Z88 EPROM**. Please be sure to enclose a stamped-addressed envelope with anything needing a reply.

Editorial

The first item on the agenda this time is an apology. All those people who have ordered the Eprom Satellite Special will have noticed that it has not arrived on their doormats at the end of August as predicted. The planned publication date was based on information from CCL as to when a dish would be available, and as the dates approached and passed with no sign of a dish, it became obvious that the Special would not be out on time.

As I write this at the end of August there is still no sign of the CCL satellite receiver.

The best that I can guess at the moment is that it should be out within 4 to 6 weeks, but again this obviously depends on CCL supplying a receiver for review. Please accept my apologies - I generally try to stick to deadlines as I know how disappointing it is when things are late. I hope you will understand that the delay is beyond my control.

Later in this issue you will find a detailed breakdown of the results from the Members' Survey taken a couple of issues ago. As a result of this, there is going to be a major change in the publication of **Z88 EPROM**. By popular demand, instead of being published six times a year, starting with the next issue (November) it will come out ten times a year.

Publication will be every month, with no magazine published in the months of January and July. The new subscription price for ten issues will be £9.95 - still nominally £1 an issue in the U.K., the same price as when the Club started in 1987! For those of you who don't wish to pay out £9.95 at one time, I have decided to re-introduce the half-year subscription, at a cost of £5.95 for five issues.

I thought long and hard before taking this decision, since obviously I would not want the extra cost to drive any members away. This was why I decided on ten issues rather than twelve (as well as this giving me a couple of short breaks in producing the magazine!)

One question which cropped up several times on the surveys, regarding an increase in the number of issues, was whether there would be enough material to fill them and keep them interesting. As editor I have certainly felt confined by the limits of publishing bi-monthly. As well as not having the room to say everything I want, I also have a backlog of articles sent in by members. Also as the Club is still growing it seems reasonable to assume that more people will send in things for publication. Having more room will also allow **Z88 EPROM** to cater for a wider variety of people, with space for special interest sections and the like.

On the subject of submissions, please keep them coming in. As I have said before, this is **your** magazine, and the more of it written by you the better. What I would particularly like are some more technical articles, and features where people are using their Z88s either in unusual locations or for unusual jobs. As ever, anything is welcome, so keep the articles coming in.

Quite a few people, especially from overseas, have suggested that the Club should accept credit cards. This is due to the high cost of raising a Sterling cheque for what is a relatively small amount. After contacting all the major credit card companies, I'm afraid this won't be possible at the moment. The problem seems to be that the level of business is just not high enough for the companies to be interested. I will keep trying but don't hold out much hope.

From a negative to a positive - you may remember that in the last issue I mentioned that I was trying to arrange with CCL for the Club to stock Z88 spares. I am happy to say that they have finally agreed to this, and I now have a stock of certain spares. CCL did place several conditions on the deal; namely that I print a statement in all ads and instructions that anyone repairing their own Z88 will invalidate any remaining warranty on the machine. They have also restricted the type of spares I can sell to non-electronic items; (case parts, legs etc.). The only exceptions to this are keyboards and displays, since these are both easy plug-in items. Later in this issue you will find an advertisement for spares.

After the announcement in the last issue about the availability of Club Binders, I did have a few orders soon after the mag was distributed. This flow of orders has now reduced to a trickle, so if you want binders please send off your order - 500 of them take up rather a lot of my bedroom/office!

Newslines

- **ALAN BOXER**, Managing Director at CCL, has left the company to work for the Scheduling Technology Group Limited as MD. Boxer, who was awarded the OBE in 1979 for his services to British commercial interests, commented that he "was sad to leave Cambridge Computer at a time of rapid progress for the company. However, Scheduling Technology offers a very exciting personal challenge and I look forward to participating in its further development." Until a replacement is appointed, the role of MD is filled by Dave Chatten, CCL's Manufacturing Director.
- **GEOFF COOPER**, who has written several articles for **Z88 EPROM** while working at CCL, has also left the company. Geoff is moving on into a programming career with a large insurance company, but he assures me that he will retain an active interest in the Z88 and the Club. Who knows, we may yet see more of Geoff's interesting articles!

- **WHEN THE Z88** was launched with a fanfare of publicity in 1987, one of the quoted "revolutionary" features was the capability to address 4 megabytes of RAM, previously unheard of on a small portable machine. The leaflets said that one megabyte cartridges would be "available soon". A later leaflet even went on record that they would be out in "the first quarter of 1988". You may also remember the promised 0.5M and 1M EPROMs. CCL now tell me that all these products will not now become available, citing "insufficient demand" as the reason.
- **RANGER COMPUTERS** have released their Z88 disk drive system, hot on the tails of the XOB and U.S. systems reviewed in the last issue. The "Rangerdisk" is a battery-powered 3.5" drive which gives 720k of storage per disk. Z88 disks can also be exchanged with standard PC disks, allowing easy data transfer between machines. The Rangerdisk costs £450 - a high price indeed, but understandable since the Ranger product is aimed fair and square at the corporate Z88 user. More details (for those who can afford it!) on 0604 791064.

Helpline

CLI Files - Contact Michael Hey by post only at: 18 Woodside Road, Sandiacre, Nottingham. NG10 4GP

Z88 to Amstrad PCW link - please write in the first instance to Mr A West, 16 Southway, Burgess Hill, Sussex, RH15 9ST

Any more Helpliners would be gratefully received!

Members' Letters

Philip Hodson (0713)

Dear Roy,

My experience of Z tape VO.01 and Spellmaster version 1.03 8 November 1988, is that they make very poor bedfellows in the same Z88.

I have two Z88's and the experiences are different with each machine.

With both Z Tape and Spellmaster loaded into slots two and three in the first Z88 I found that Spellmaster's QuickEdit would load text normally, but where that text contained columns, only column A was saved from

QuickEdit in response to executing a Save.

Also if the text contained some 500 lines, only about two hundred of those lines would be saved. The lesson was to change the filename before saving, so as not to overwrite the old Pipedream file.

As soon as Z Tape was removed from slot 3, QuickEdit behaved perfectly normally again.

With my second Z88, effects of having both Spellmaster and Z Tape in together was frighteningly dramatic.

Loading a file into QuickEdit was accomplished normally, as was the spellchecking. Saving the file caused all files in both RAM 0 and RAM 1 to be entirely erased, leaving only my Pipedream copy of the file in the applications list.

I quickly saved that application and entered Z tape to make a tape copy, and found five copies of the file in RAM 1. But then when I pressed [F], for the filer, only the one copy of the same file was present. Pressing [J] caused 5 copies of the file to be present in RAM 1 again!

So I chose one at random, marked it, saved it to tape, and that save worked.

I then went to INDEX to kill the QuickEdit application. <>KILL caused a complete stoppage of all keys. I did a soft reset which worked.

I then repeated the whole procedure of loading a file into QuickEdit, saving it, which again caused a loss of the one file I'd had from my last procedure of saving to tape.

Trying to KILL QuickEdit again caused a stoppage, but this time I tried to access the clock with [T].

That worked! It freed the Z88. But each time I went to KILL Quickedit it stopped up again.

In the end the only way I could clear QuickEdit was with a soft reset.

Operating Spellmaster without Z Tape caused perfectly normal performance of QuickEdit.

Any comments anyone?

(I have sent copies of Philip's letter to Wordmongers and Computer Concepts - Roy)

Vic Gehardi's "RAKEWELL SEMINARS".

For anyone who has not been on one of these seminars, I can assure you they "RATEWELL" not only in my own books, but with everyone else I know who has attended. "Splendiferous" is not a superlative expression.

Vic's style is bright, cheerful and helpful. No problem is too much trouble. He is an ardent fan of the Z88, and that style is most infectious. His patience, and ability to get to grips with difficult techniques, and impart them successfully to computer illiterates like me, renders him deserving of CCC's highest award for effective endeavour. In a difficult market, he must be CCC's greatest friend.

Unless you know everything there is to know on the Z88, beating a path to Vic's next seminar will assure you of a most illuminating day.

PUNCTUATION MARKS

The apostrophe always looks unsightly on screen, if placed before a word as a single quotation mark, because it slopes the wrong way. I discovered the other day that if you press <>' then the apostrophe slopes the other way. Magnificent isn't it?

Readers' Survey Results

What follows is a breakdown of the answers to the Readers' Survey a couple of issues back. It was only possible to numerically analyse certain questions, where the answers requested were of a Yes/No nature. Obviously the rest of the survey gave many differing but nonetheless valuable opinions on the content and future development of the magazine and Club.

572 Responses were analysed.

(At the time of the Survey this represented approx. 26% of members.)

411 (72%) wanted 12 issues a year

194 (34%) wanted more adverts

366 (64%) wanted the same adverts

3 (0%) wanted less adverts

228 (40%) wanted Club binders

22 (4%) attended the April Workshop

308 (54%) would attend a future Workshop
91 (16%) wanted Workshops further North
211 (37%) wanted Workshops further South
268 (47%) wanted food included

What was suprising was the large number of people wanting more adverts - many people said this was because **Z88 EPROM** was their only source of information as to what was available. The other shock was the number of you who said you would attend a future workshop, but whether this would actually translate into "bums on seats" I'm not sure!

Given the useful information gleaned from the Survey, I think it will be worthwhile to make it a regular feature - perhaps once a year.

Queries, Hints and Tips

G.L. Cantrell (1266)

I wonder if any member has come across or written a program to link an Acorn Electron to the Z88.

Michael Penrith (2333)

I have an Epson PF10 (model F10PA) 3.5in portable disc drive I would like to use with the Z88. It has either battery or mains power supplies. The rear panel has two eight pin sockets - serial in and out. Can anyone advise me of any procedures to make it work as an external drive?

Mark Ambrose (1483)

Has anybody found a way of command recall in BASIC, like the F3 keys on the PC? A future feature for the BASIC Patch?

Allen Bartram (0864)

Does anyone know if there is a program for the Z88 for logging amateur radio contests? If anyone has written a program, or is thinking of doing so please contact me at 47 Templegate Crescent, Leeds, LS15 0EZ.

Terry Cannon (1094)

I know that EPROMs only work in slot 3, but is it possible to put one in say slot 2 to "store" it, so as to keep it from being lost or damages when travelling around? Does this have any detrimental effect on battery life?

(There is no problem in doing this. EPROMs can only be written to or read from in slot 3, and these are the only times it draws any battery power. You can quite safely store them in either of the other two slots for safe keeping - Roy)

B J Green (1660)

Once in a while there will be the dreaded message "File in Use" which means a file cannot be saved over, or deleted. The only solution is via a hard reset, and then to recover files from backup storage. ("File in Use" should actually be cleared by a soft reset - Roy)

I feel sure that it must be possible to POKE the byte that signals a file in use, and thereby avoid the need to reset the Z88. Is there any information or a program which will do this?

SOFTWARE REVIEW - Z88 FINGER ORGSANISER

By Michael Hey (0703)

The Finger Organiser from Harvester Information Systems is the second touch-typing tutor to be produced for the Z88. (The other is T-Touch, which was reviewed in the Jan/Feb issue of Z88 Eprom.)

The Finger Organiser consists of a ROM plus a small sheet presenting a brief summary of the typing course; the instructions appear on-screen at the appropriate time. Unlike the T-Touch typing tutor the Finger Organiser comes with practically no printed material to offer extra guidance. I got round this short-coming quite easily by the simple expedient of a quick trip to the local library. To get started you select INDEX, insert the ROM and press [JH]. Following the title screen the program asks you to enter your name. This is stored in a file called FINGER.HIS, which also holds the i.d. of the last lesson which you completed together with your typing speed. Thus whenever you resume work with the Finger Organiser it remembers who you are and whereabouts on the course you have reached. I loaded FINGER.HIS into Pipedream and edited it about a bit, with the result that the Finger Organiser attempted to start up non-existent lessons. (I don't recommend that anyone try this.) I managed to get the program to hang after torturing it for awhile.

The lessons are graded, starting with simple sequences and becoming more difficult. However you must complete each exercise with fewer than three mistakes and at the correct speed before you are allowed to progress to the next one (though you can 'escape' and re-enter at a more difficult level, to satisfy your curiosity).

The first lesson introduces a simple pattern of letters "fff jjj fff jjj fff jjj" and so on, working up to complicated sequences full of numbers and symbols. There are 60 lessons in the package, and one sound effect!

The display is divided up into two windows. The left window displays a picture of eight fingers, with the keys to be pressed by each finger displayed next to it. The right window gives instructions. On pressing a key the next exercise starts. The display changes so that the left window shows the exercise to be typed and the right window becomes a map of the keyboard. (This reminds you of a key's location which you may have forgotten without looking at the actual keyboard - which is absolutely forbidden in touch typing!)

Each exercise consists of a series of 45 letters which you have to enter twice. When you complete one exercise successfully (i.e. making fewer than three mistakes and within your allotted time) you automatically go on to the next. At the end of each exercise your speed and the number of mistakes are reported in the right window.

In order to get an independent opinion of the Finger Organiser I enlisted the help of my Mother, who is a fully trained touch typist (though rather out of practice these days). Getting started was a bit tricky but once she had got the hang of the auto-repeat progress was rapid. Soon she was typing away with growing enthusiasm. The method of tuition, repeating the same exercise over and over was similar to the method by which she learned to type, except that "we learned by typing to music."

My wife, who can't type but can teach, criticised the program for not moving on if you fail an exercise consistently - apparently it is poor educational technique to bore your pupil to death. However if you get too frustrated you can always kill the program and then re-enter at the next lesson.

The only real fault I can pick with this is that it mucks about with the Z88's clock! Once it travelled back in time six days. (This drastically cuts down the time taken to complete the course: you could theoretically complete it before you started!) No harm is done; you just have to remember to re-set the Clock each time you leave the Finger Organiser.

In my view learning to type is like learning to swim, or to ride a bike - no one can teach you how to do it, you have to teach yourself - but it helps to have a good coach shouting encouragement. If you want to learn to type without spending much money then buy a book. If you want a simple, straightforward package to help you learn on your Z88 then Finger Organiser is worth considering, but don't forget that it cannot supply the stamina and concentration you will need.

The Finger Organiser costs £40, but remember that when you complete the course you can erase the EPROM, thus effectively reclaiming £20!

The Harvester Wordchip is produced by: Harvester Information Systems Ltd., Unit 1, Ealand Science Park, Wharf Road, Ealand, South Humberside. DN17 4JW. Telephone: (0724) 710222

Z88 BUG LIST

18th July 1989 John Crouchley (0986) Issue 4

My Z88 serial number is SCI 004044 ROM 2.2 128K RAM in slots 1 and 2, Spellmaster in 3 SpellMaster version 1.03

I would be interested in any additions or corrections and also any workrounds that anyone may know of. Please send them to me on Telecom Gold 72:MAG12060 or to:

Mr. J. Crouchley 70, Ashchurch Drive, Wollaton. Nottingham, NG8 2RA

This is a list of all known faults concerning the Z88, with workrounds, recommendations etc. where possible. I have also included suggestions, questions and useful bits of information.

PDM0001 Pipedream problem:- can lock up when deleting rows ... (only happened once and I couldn't repeat it so I don't know any specifics) Now happened again, still can't repeat it.

PDM0002 Pipedream keep page length below 255 or all sorts of nasty things can happen when page boundaries are crossed.

PDM0003 Pipedream, watch out for indirect expression errors, can cause lockup.

PDM0004 Pipedream, DO NOT use <>BRP (replace) across slot boundaries. It crashes (soft reset required) the machine if the replace

string crosses the slot boundary. I.e. assume you have "FRED ^BJOHN" as the search string and "FREDDY JAMES" as the replace string, if the search string is found the Z88 locks up and requires a soft reset. To be safe do not use a space in the replace string as this can mean a slot boundary, use ^S if space is required.

PDM0005 <>EIP can cause garbage to appear on the next line when a line count is specified. It depends upon the contents of the line before the <>EIP. The garbage may disappear when it is scrolled off the page. Simon Phipps (0221)

PDM0006 When using .I filelist files the screen is not initialised between files, so that any lines in the new file after a command like <>FN which are shorter than the ones previously displayed have the residue of the old line. Simon Phipps (0221).

I have not been able to duplicate this.

PDM0007 The search sequence ^B when used on its own to match the start of a line does not work.

PDM0008 The search sequence ^# does not work properly. E.g. if you have the following:

14/1

15/4

3/11

Then replacing ^#/^# with ^#2.^#1 does not work:

Expected: Actual

1.14 .141

4.15 .154

11.3 .311

BAS0001 Don't play with HIMEM in Basic, this is dangerous and can cause lockup.

FIL0001 Filer Catalogue - don't escape out, can lock files. This causes problems when later attempting to write or delete the files. A soft reset fixes this.

FIL0002 Filer catalogue of :RAM*/**/* crashes and deletes ram.

Z88 Spares Service

Please note that Spares are supplied to Members Only.

<p>Z88 Display - Quick replacement if your display is cracked. Please do not order if your display is not obviously damaged. £85.00</p>	<p>Z88 Keyboard - Complete assembled unit which just plugs in. Ideal for those plagued with dodgy keys! £19.95</p>
<p>Does your Z88 Leg flop about because the little lug has broken off? This can be easily replaced for just £1.95</p>	<p>Broken Battery Cover? Cheap and so easy to fit! £1.50</p>
<p>Z88 Manual - Issue 3 - £7.95</p>	<p>Has your Z88 case got scratched or damaged? We can supply new Lower Cases for £2.95, and new case tops (the bit that says "Z88") for £1.95. The metal Function Key Strip is just £2.25.</p>
<p>Card Slot Cover - the smoked plastic part with "1 2 3" on the front of the Z88 - £1.50</p>	
<p>Z88 Rubber Feet - the set of 2 front and 2 rear for £0.80 Screws for the Z88 - Set of 5 for just £0.60, or 10 for £1.00</p>	<p>Have you lost the little cover that hides the Z88 expansion bus on older models? A new Expansion Bus Cover is just £0.95</p>

Please note that all parts are supplied with full fitting instructions where applicable. Displays are tested before dispatch. No parts are returnable if ordered in error. Send your orders to **Z88 Users' Club 68 Wellington Street, Long Eaton, Nottingham. NG10 4NG** Prices include U.K. Post & Packing. Overseas please add £2.50 extra

IMPORTANT NOTICE: By opening your Z88 you will invalidate any remaining warranty on your machine. Neither the Z88 Users' Club nor Cambridge Computer Ltd will accept any responsibility for any damage, howsoever caused, to either your Z88 or its peripherals, caused in the course of fitting any spare parts.

Wordmongers

Wordmongers Limited

21 Edison Rd, Rabans Lane,
Aylesbury, Bucks. HP19 3TE.

Telephone: 0296 43 78 78

The Z88 Software House

At last, we have finalised our distribution agreement, and have been released from the hassle of the production line. We can now spend more time doing what we do best, namely writing new software for the Z88.

The name of our distributor is Talent Plus, and their telephone number is (0303) 813883.

There is some confusion about the range of Wordmongers Superchips available, so here is a list of the current options:-

Superchip - Zterm & Ztape

Superchip 1 - Zterm & Ztape & Thinkz

Superchip 2 - Zterm & Zbase

Superchip 3 - Zterm & Zbase & Ztape

Superchip 4 - Zterm & Zbase & Ztape & Thinkz

Each Superchip contains four slots, and where there is a free slot, it is normal practice to insert one of the Wordmongers games into that slot.

To order a Superchip, or to check prices, contact your local Z88 dealer. If you dont have a dealer then contact Talent Plus for help in finding one.

To talk technically about Superchips (or anything else for that matter) phone Wordmongers.

Wotz new?

We are experimenting with a 'run-time' eprom, which will allow you to run applications from RAM. So it may, in the future, be possible to purchase programs like Thinkz on cassette tape!

An expenses suite is being written to run under a run-time version of zBase.

If you have any good ideas for Z88 software, then feel free to phone and talk about it. After all, we only want to be writing software that YOU want for your Z88.

Thats all for this month.....



Directors: Tony Kaye BA MBA, Clive Salvidge BSc.
Registered Office: 151 Uxbridge Rd, London W13 9AU
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BINDERS!

By popular demand we are pleased to announce the availability of custom-made Users' Club binders - just the thing to keep all of your valuable copies of Z88 EPROM together and in pristine condition.

The binders come in a durable grey PVC material with "Z88 EPROM" printed in blue on the spine, and the Club logo on the front. Each binder will hold twelve issues.

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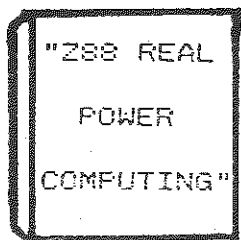
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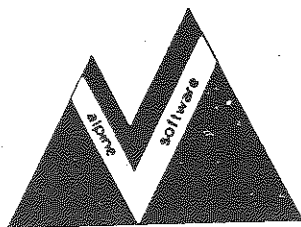
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FIL0003 Filer catalogue of :RAM.*/** causes a problem when spooling to s.sgn.

PED0001 PrinterEd do not switch off line feeds, this does not work properly.

PED0002 The PrinterEd triggers a FAIL condition after several different configurations have been loaded and the <>FU command used on them. It is particularly associated with use of the '?' feature where the Z88 does the work during underlining; loading a driver which doesn't use '?' after this seems to trigger the problem and cause bug PED0003 as well. Simon Phipps (0221)

PED0003 After a configuration has been used which uses the '?' feature (see bug PED0002), subsequent configurations do not have their underline code sent. Simon Phipps (0221)

TRM0001 Terminal Parity and XonXoff bugs. The serial port driver does not correctly cope with odd and even parity characters on receive, the eighth bit not cleared and thus the terminal emulator displays characters with the parity bit set as squares (corresponding to the Z88 character set 128-255). Solution is to set the parity to SPACE or MARK. This does not of course help if the service you are connected to is looking for characters with parity.

TRM0002 The serial port driver does not always cope with XonXoff handshaking correctly, this can result in data overrun when communicating with a VAX at speeds greater than 1200 baud for instance.

IEX0001 Import/export: after doing a Send, followed by a Batch Receive. Every file received is forced to the same file name as the file sent!!! Solution is to exit ImpExp and reenter it.

IEX0002 If you ask to receive a file while specifying a new name, an extra pad character (binary zero) is added at the start of the file. Simon Phipps (0221). I have not been able to duplicate this bug, ImpExp works perfectly for me. I suggest that the fault is in the sending end.: awaiting further information.

SYS0001 Boot.cli problems. If you use Boot.cli on an EPROM then it will work OK the first time it is actioned, but not the second time. The main culprit is the fact that when booting from EPROM, the Z88 copies the file Boot.cli to Ram.- and executes it from there. When you try it a second time, if the Boot.cli is still on Ram.-, then the system will crash - not even a soft reset will wake it up again. Only a hard reset works (sob.). I have spoken

to Matthew Soar (CCL) who says that this is due to the RAM.- drive not working properly on the UK drive, and recommended that you do not use RAM.- apart from storing temporary files. If there are any files on Ram.- when resetting the machine, then OZ gets confused. This is a continual problem for me, I usually need a hard reset about once a month which is a bit of a pain really. I am awaiting a reply from CCL. - Steve Marsh.

APP0001 Most Z88 applications (Pipedream/diary/terminal etc.) allow for typeahead by placing a priority on scanning the input before (and during) the processing of input. If input arrives too quickly then the typeahead buffer can fill up. This is indicated to the user by the Z88 beeping and the characters being lost. This causes problems when using the CLI to input to these applications as the CLI ensures that there is always a character available. BASIC appears unaffected by this, but you cannot use the CLI to output a long file down the serial port!!

HDW0001 Voltages when powering Z88 externally (not from CCL mains adapter or other isolated supply) and using the serial port can cause problems, this is because the 0V on the serial port is about 5V +ve with respect to the 0V on the Z88 power socket. Many devices connect 0V to mains earth and use the same 0V on their serial ports, thus you can end up shorting out the power supply through the Z88 circuitry. This arose when a friend was playing with packet radio in his car, powering both the packet radio interface and the Z88 from the car supply (via a regulator).

HDW0002 EPROMs - some of them have microscopic particles INSIDE the chip which can end up on top of the silicon bit - this acts as a small umbrella preventing you from erasing an EPROM fully. a sharp tap on the side of the EPROM is usually enough to fix the problem. - Steve Marsh

HDW0003 Z88 Hardware, what is the expected life of the display? In particular can the front plastic be replaced when it gets scratched? Should it be protected in any way i.e. varnish, extra plate (perhaps thin glass)?

SPELLMASTER 1.03

There are some serious bugs in previous versions of SpellMaster (try loading two user dictionaries one after the other - take a backup of ALL RAM first!!). If you have a previous version then contact Computer Concepts for a replacement.

QED0001 QuickEdit <>BC to copy a small marked block sometimes gives an inverted @@@@ as the copied string!!

QED0002 SpellMaster cannot cope properly with single quoted strings e.g. 'abcd', these are recognised as spelling mistakes but the string replaced is 'abc.

QED0003 When in QuickEdit (checking as typed) and a mistake is made the Z88 beeps. At this point you are supposed to be able to press escape to correct the word. I find that this does not work if inserting text, you have to backspace to the word and then press escape.

QED0004 In QuickEdit, when checking as typed, if a word is incorrect but terminated by a return (enter) it is not checked!!. This affects the last word of a paragraph.

QED0005 QuickEdit, block move, positions the cursor at the point the block was moved from. It would be much better to leave it at the insert point, either before or after the inserted text.

QED0006 QuickEdit, <> up arrow and <> down arrow mean beginning and end of file EXCEPT when on the first or last line when they stay in the same column position.

QED0007 QuickEdit, when scrolling up and down the file I had three characters replaced with binary zero (inverted @). There were quite a few suspended processes, and memory was quite full. No apparent explanation for the problem. I saved the file, the three characters were found to be binary zero. I then killed the edit.

QED0008 QuickEdit, after marking a substantial section, I went to the beginning of the file and searched for a string (to move the block there). The Z88 screen immediately went blank, and would not switch on. This required a SOFT RESET to recover the situation. On examining the files in memory I found that there were two copies of :ram.-/s.sgn with a creation date of 4000 odd BC. The filer refused to list any further. :ram.1 and :ram.2 are OK. Solution - back up Z88 and then HARD RESET.

QED0009 When processing large documents (>16Kbytes) QuickEdit sometimes loses track of the file after a spell check with <>CA. If the file is subsequently saved then a small amount of garbage is saved to the file and the main text is lost. Simon Phipps (0221). It is strongly recommended that the file be first copied and then spell checked. Also if this bug appears then perform a HARD reset as soon as possible because some of the OZ RAM appears to be corrupt and other problems soon manifest themselves. Observation indicates that this bug manifests itself when SpellMaster is suspended. In order to ensure that it does not become suspended

during a long spell check, switch off the timed power down (as SpellMaster does not prevent this) and do not move into another application until the complete operation is completed.

QED0010 When spell checking a long document with <>CA, replacing a word takes a long time. Simon Phipps (0221). This is because SpellMaster searches the remainder of your document for words with the same mistake, and replaces those as well.

QED0011 When attempting to load a document which won't fit in memory, the message "No room" is given, but then it is impossible to do anything like []F to enter the filer and free up room; you just get the "No room" error repeatedly, presumably because the program cannot store it's context and has not de-allocated the memory it allocated previously. The solution is to load a small document (if you can remember the name of one) which clears away all previously allocated memory.

Hardware Project:

Z88 12v Power Supply

By Iain Manson (1875)

The following circuit can be built for a few pounds, and provides a method of running the Z88 from a car battery or other 12v power source, e.g. a CB power pack. It also allows for a pack of 5 or 6 AA size Ni-Cd cells to be charged at the same time.

The charging current is approx. 40mA which is a safe rate for a 16 hour charge. The current will vary depending on the input voltage and the number of cells charged, but not by a significant amount.

I would not recommend using the unit while the car is being started as the suppression devices are not rated to stand the interference a car starter motor produces.

The parts are all readily available, but if you cannot source them locally I can supply either a full kit of parts for £9 or a ready-built and tested unit for £12, both prices including post and packing. Send to Iain Manson, 85, Bishops Park, Midcalder, West Lothian. Telephone 0506 883091.

Parts List

F1 800mA
D1 IN5002
C1-C4 330nF 50v
I1 10uH Value unimportant but 0.5A min current
VR1 7805 Regulator
RV1 1000ohm preset
ZD1 7v5 1.3 or 5W Zener
LED red LED
R1 150ohm 2W
R2 470ohm 0.5W
Fuseclips or fuseholder
2.1mm Long Reach Power Plug
2.1mm Socket
Car Adapter
Box with metal lid

Circuit Description

F1.D1 Provide reverse polarity protection. F1 is rated between 0.6 and 1.0 amps

C1.I1.C2 Provide an interference filter. The value of I1 is not important provided it can carry more than 0.5A C1 to C4 can be any value between 0.22 and 1.0 microFarad

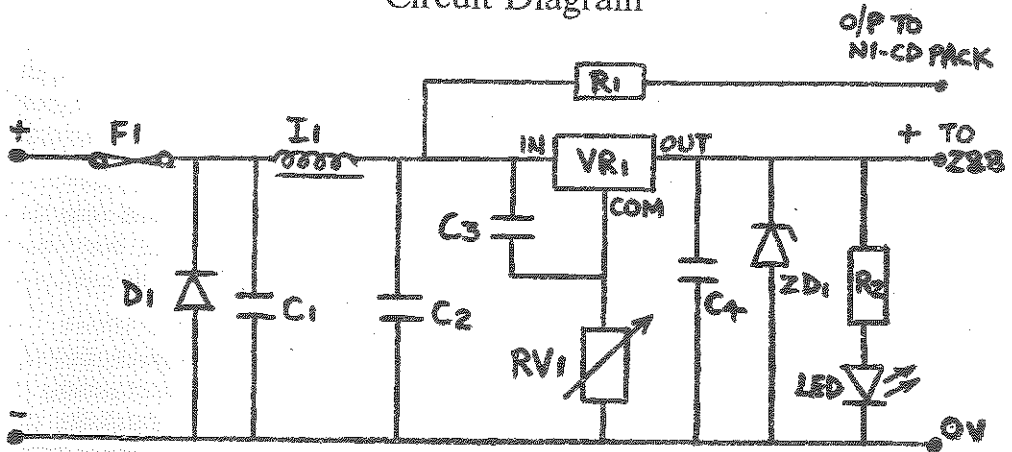
VR1 is a 5 volt regulator. The output voltage should be adjusted to 6.5 volts using RV1. C3 and C4 keep VR1 stable. ZD1 will conduct if the regulator VR1 fails (very unlikely!) and blow the fuse F1. R2 and LED are an ON indicator.

R1 is a current limit resistor which will charge a five-cell stack at approx. 40-50mA. The cells should be connected for 14-16 hours. The pin connections on the 7805 regulator are with legs facing you face up.

LHS=Input. Centre=Common. RHS=Output. VR1 tends to run hot and so should be bolted to the metal lid of the box. R1 will get hot while Ni-Cds are being charged - this is normal.

The unit can be run from any D.C. supply from about 9 volts to 20 volts, with a rating of 0.5A or more, but batteries should only be charged with an input between 12-13.8 volts.

Circuit Diagram



My next project is similar to this one except it has its own batteries, so the Z88 can be run off the batteries during the day, and you leave the supply in the car overnight to charge for the next day. If there is any interest please let me know.

Z88 STEPPER MOTOR CONTROL

By Geoff Thorne (0791)

Perhaps there are those among you who are fed up with controlling the local Power Station with your Z88s. (Ah! those ZX81 adverts - now my age is beginning to show!)

I have just completed a short project, the aim of which was to control a stepper motor via the Z88. By suitable gearing, this then allows very precise angular measurements/settings, or by suitable modification of the final drive, very precise linear motion.

I am writing this partly to pass on the information in the hope that it will be of use to others, and also so someone with much more skill and knowledge can write and tell me how wrong I've been!

The basics are:

A plug for the RS232 port is needed with pins (4/5) and (8/9) shorted together. Output being pin 2 (TXD) and pin 7 (GND). This output is then fed to a standard 555 timer chip (monostable mode). I used timing values of 100k ohms and 0.1 micro Farad.

However, as the 555 is triggered on the trigger input going below 1/3rd Vcc, the GND lead from the RS232 goes to pin 2 of the 555 and the output (pin 2) of the RS232 goes to 555 GND. This is because the RS232 output sits at -5V and pulses to +5V i.e. connecting the leads in the normal manner holds the 555 triggered continuously.

The output from the 555 (pin 3) goes direct to the SAA 1027 drive chip for the stepper motor. Each pulse drives the motor through 7.5 degrees. (Motor, parts and PCB are available from Maplin.) The chip also allows clockwise/ anti-clockwise rotation.

Well, that's about it. The BASIC program which runs this is given below, very much as a prototype, with indication of timings involved. Outputting a 0 gives a single pulse at the RS232 port, removing any possibility of multiple triggering of the 555 with other values. This can be overcome with careful choice of timing components, but could reduce flexibility of operation.

The baud rate is 9600 and omitting the line which prints the step number, this program will easily drive the stepper motor at approx. 70 steps per second - plenty of room for modification.

```
5 *NAME DRIVER.BAS
10 CLS:INPUT TAB(20,2)"NUMBER OF STEPS";S
15 INPUT"DELAY BETWEEN STEPS";D
18 TIME=0
20 Z=OPENOUT(":.COM.0")
30 FOR F=1 TO S
40 BPUT#Z,0
45 PRINT TAB(20,4)"STEP NUMBER IS";F
```

```
50 FOR N=1 TO D:NEXT
60 NEXT
65 PRINT TIME/100;"SECS"
70 END
```

Z88 User Definable Graphics Characters

By Mark Ambrose (1483)

You may or may not know this but it is comparatively easy to produce user definable character graphics on your Z88 latex notepad. So with this article I will hopefully show you how to design and generate the codes for the your own graphic designs.

Firstly we should look at the cursor. If you examine it carefully you will see that it composed of a block of pixels 6 across by 8 rows deep. The pattern is represented by the black (or marked) pixels and the clear pixels.

		1	2	3	4	5	6	<-- Columns
		1	XXXXXX					
		2	XXXXXX					
		3	XXXXXX					
Rows	-->	4	XXXXXX					
		5	XXXXXX					
		6	XXXXXX					
		7	XXXXXX					
		8	XXXXXX					

We must transform the pattern we want into a digital format for the Z88 to recognise. The marks are converted to 1's while the spaces are 0's in binary number that represents the line of pixels. But as us humans work in decimal, I'll continue in the decimal radix for the remainder of this article.

Each marked pixel in a row is a set bit and represents a value. (This value equates to 2 to the power of the pixel number). These values are totalled and represents the pattern of marked pixels in a row.

Firstly to illustrate the calculation procedure of a row examine the chart below:

	Pixel Number	5	4	3	2	1	0
	Value	32	16	8	4	2	1
a	All pixels ie -	x	x	x	x	x	x
b	One pixel ie .	-	-	-	-	x	-

Example a = $32+16+8+4+2+1 = 63$

Example b = $0+0+0+0+2+0 = 2$

The above examples are only for one row, but as the character is made up of 8 rows, we sequence them together so that the Z88 can build the character.

Using this method we can design and draw the character required. To show this principle I will draw a little man, illustrating the calculation of the row numbers, the character definition and generation. First we must convert our design to the digital form understood by the Z88.

		Pixel Value						
		32	16	8	4	2	1	Row Totals
Row	1			X	X			= 12
	2			X	X			= 12
	3	X	X	X	X	X	X	= 63
	4			X	X			= 12
	5			X	X			= 12
	6		X			X		= 18
	7	X					X	= 33
	8	X					X	= 33

We now use these row totals in the BASIC VDU command.

Firstly we must define the character, assigning it to a code, then we can simply print this code when and as often we like. It must be noted that we can only define 16 characters on an unexpanded (ie. <128K) machine, otherwise it'll cause problems with Pipedream.

The format of the VDU definition is as follows:

VDU1,138,"=",charcode,r1,r2,r3,r4,r5,r6,r7,r8

Where charcode is between a value in the range 64 ('@') to 127 (DEL), and r0-r8 are the row totals as described above. To print the character, we also use the VDU command, but in a simpler form...

VDU 1, '2', '?', charcode

So to generate our (little) graphic man we must code the following program:

```
10 REM MAN
20 REM DEFINE HIM
30VDU1,138,"=","@",12,12,63,12,12,18,33,33
40 REM PRINT HIM
50 VDU 1,"2","=","@"
60 STOP
```

The following simple program allows you to experiment with the graphic characters. I wrote this program to allow me to play with character patterns. I found it very useful so to run it, input the row totals (A to H) and the pattern will be displayed alone and in a series. (Useful to check spacing if necessary)

```
10 INPUT A;B;C;D;E;F;G;H
20 CLS:PRINT:PRINT
30 PRINT A;" ";B;" ";C;" ";D;" ";E;" ";F;" ";G;" ";H;" = ";
40 VDU 1,138,ASC"=",ASC"@",A,B,C,D,E,F,G,H
50 VDU 1,ASC"2",ASC"?",ASC"@
60 PRINT " ";
70 C=0
80 VDU 1,ASC"2",ASC"?",ASC"@
90 C=C+1
100 IF C<10 GOTO 80
110 PRINT
```

Ok..the future. There must be some of you boffins out there who could write a interactive character editor to automatically generate the line of BASIC... (Don't forget to send me a copy!)

Anyways have fun (there's lots to be had), and let me know how you get on.

CLI Library

By Michael Hey (0703)

Here is a list of the titles currently available in the Z88 Users' Club "CLibrary". Anyone wanting a copy of any of the following should send either a cassette, disk, EPROM or blank sheet of paper (as appropriate) with the correct amount of return postage and packing to me at this address: CLI library, 18, Woodside Road, Sandiacre, Nottingham. NG10 5GP.

Further contributions are always most welcome, as are requests for help from puzzled Club members. Please note that the only disk format I can accept is the 3.5-inch XOB type.

X001 Footnotes/endnotes in Pipedream, by Bruce Knox (0874). This suite of routines eases the arranging of "endnotes" in Pipedream documents. Ideal for those who use their Z88 in libraries for composing the sort of articles and essays that contain dozens of footnotes. Notes are written along with the main text, and then the routine "throws" them to the end. It can also check that the numbering is in the correct sequence. Detailed documentation is included. Size: 40k in all - it can be reduced if necessary, to be expanded by the user.

X002 Function Keys. A short (1k) BASIC program which allows the Z88's number keys to run macros. The program comes with a selection of routines already programmed. The function keys will work with Pipedream, BASIC, 3rd-party software, etc., etc. You can add your own CLI routines with ease.

X003 Automatic Diary page turner, by B. Green. About 100 bytes. Can be supplied on paper for you to type on to your Z88.

X004 Disc utility no. 1, by Yrs. truly, for those with the XOB disc system. Saves the entire contents of RAM on to disc, as a "back up". 1k

X005 Disc utility no. 2, also by me. As above but copies the entire contents of an EPROM on to disc (one item at a time to avoid "No Room" errors.) Takes about 25 minutes to copy a full 128k EPROM, so that it can be erased for re-use. 1k

X006 Two column text in Pipedream, with column A in condensed print for jotting marginal notes down in. - Another contribution from B. Knox. (Approx 200 bytes.)

LIBRARY UPDATE

By Ian Braby (0123)

This edition's update is a bit short of contributions, I'm afraid, so would Alan Fleming (1717) and John Crouchley (0986) please re-submit their programs!! And if anyone else has something they'd like to share with us, please let me know.

Z082 SOUNDEX by Mark Stevenson (0716)(4k). An interesting program especially for genealogists(!). It reduces any name to a four character code for searches meaning that seeking "Smith" will check "Smithe", "Smyth" and "Smythe".

A=documentation

B=program

Z083 Z88-QL Character Translator by Salvador Merino (2268). A Turbocharged SuperBASIC program which converts line-feeds and foreign characters; designed with an MGE QL and a Spanish Z88 in mind. Only available on QL disk or mdv.

And for those who are interested: the Library is currently kept on 4 128k EPROMs (2 contributed by CC) as well as a QL disk and IBM (720k) disk.

Apart from my Z88 I use an Atari ST, mainly running as a QL (with the Futura Datacenter board) (hence the reason I prefer QL disks to deal with rather than mdvs).

For IBM requests I usually run **pcDitto**, although the programs are actually archived in PC format by running **The Solution** on the ST running as a QL!

Finally: speaking of PC format - the files are not supplied in **PCLink** format. Every PC disk I supply contains a README file (executable) with details of the unpacking procedure. This method works both ways and provides a way of wildcard file saving on PC disk; compare that with **PCLink II!**

And a little news! The Music Suite and I have been in touch a lot since my somewhat damning review of **Z88-ST Link v1**.

I've gone through v2, 2.1, 2.2 and 2.2a and this has culminated in the news that a Version 3 will be available very shortly. This is being completely re-written in C (the originals were in FastBASIC) and the Amiga version will be based on it.

I should have a copy soon and will be reviewing it for the next edition of **Z88 EPROM**.

Small Ads and Swapshop

****FOR SALE****

3 X 128k EPROM CARDS - £40 EACH. TELEPHONE STAN ZAWADSKI ON 09073 77591

****FOR SALE****

Z88 COMPUTER (HARDLY USED, BOUGHT OCT 1988) PLUS 32K RAM PACK AND PC LINK SOFTWARE AND CABLE - £200. TEL:0742 302175

****WANTED****

GOOD WORKING CONDITION EPROM ERASER £20, OR EXCHANGE 32K RAM CARD PLUS CASH. PHONE CHRIS ON 0271 82355

****WANTED****

BULLETIN BOARD NUMBERS WITH Z88 SECTIONS. ANYWHERE WORLD-WIDE! MARK AMBROSE (1483), WEINBERGST 2, D7250 LEONBERG 6, WEST GERMANY

****FOR SALE****

Z88 COMPUTER, 128K RAM, 32K EPROM, SPELLMASTER, PARALLEL PRINTER CABLE, Z88-BBC LINK, MAINS UNIT, CARRYING CASE, TOPPER KEYBOARD COVER, COMPLETE SET OF Z88 EPROM MAGS - £300 MAY SPLIT. PHONE NEIL ON 0377 42037 OR 0262 677555.

****FOR SALE****

Z88 COMPUTER, ONLY 6 MONTHS OLD, BOUGHT FOR £290, WILL SELL FOR £150 ONO. GENUINE REASON FOR SALE - NEW CAR! RING MARK HILLARY ON CAMBERLEY 0276 31818 (HOME) OR 0276 33243 (WORK)

****FOR SALE****

ONE 128K EPROM - £40; ONE 128K RAM - £20; ONE EPROM ERASER - £30; ONE PARALLEL PRINTER CABLE - £10. OFFERS CONSIDERED. PHONE TONY ON 092575 6069 (EVENINGS)

****FOR SALE****

Z-TAPE HARDLY USED - £40. PROGRESSED TO XOB DISC SYSTEM. TELEPHONE STAN ON 09073 77591

****FOR SALE****

Z88 WITH 128K RAM, 2 X 128K EPROM, SERIAL & PARALLEL CABLES, MAINS ADAPTER, CASE, EPROM ERASER, PC LINK II AND SPELLMASTER SOFTWARE, COMPLETE SET OF Z88 EPROM MAGS - £350 ONO. PHONE ANDREW KEEN ON 01 508 5600 (OFFICE HOURS)

****WANTED****

PARALLEL PRINTER CABLE AND 128K EPROM FOR Z88. PLEASE RING DAVID ON 0626 832863

****WANTED****

128K RAM CARD - WILL PAY £20. PLEASE SEND IT TO ROY AT CLUB ADDRESS

****WANTED****

FOR PRIVATE COLLECTION - ANY OLD SINCLAIR PRODUCTS UP TO ZX80. WRITE TO ROY AT THE CLUB ADDRESS ON PAGE 2.

NEXT ISSUE OUT MID NOVEMBER

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ALL TRADEMARKS ACKNOWLEDGED

NEW!

Z88 SOFTWARE BY HARVESTER

Harvester Information Systems Limited, manufacturers of the revolutionary software for the Psion Organiser II has produced three new products of the highest professional standard to complement the inbuilt software of the Cambridge Z88 computer. Output from the Harvester Z88 Data Organiser can transfer to the Psion Organiser II and PC.

The Harvester Z88 Data Organiser - Build A Database

Here is a database that is brilliant in its simplicity. Designed to be used by anyone whether a seasoned professional or first time user. Files can be set up almost as fast as they can be typed in using any chosen words. Files, made up of records with a maximum of 16 criteria or fields and 238 characters, can be any length limited only by eprom capacity. Data can be individually cross-referenced using up to 8 different criteria or fields.

The Data Organiser is fully menu driven and will sort text and data on any chosen field, whether alphabetic or numeric. Functions include Edit, Rename, Delete, Save, Find, Copy and Print commands. The transfer and manipulation of data to desktop computer or printer has been simplified to the point that first time users will find it a dream. With a little practice, Z88 users who regularly use a lot of data and need to retrieve facts will find the Harvester Data Organiser invaluable.

"Helpful, uncomplicated and really friendly. Harvester is to be commended for producing such a nice little program. It's all debugged and works perfectly!"

— Tim Woods "PIPELINE" - The U.S.A. Z88 Users Club Magazine.

The Data Organiser is stored on a 32K reformatable eprom.

Recommended Retail Price £54.99

The Harvester Z88 Finger Organiser - Learn To Touch Type

The inability to type has limited beginners from getting the best out of their Z88s and also prevented many would be users of word processors from ever purchasing their first computer. The Finger Organiser and the remarkably low cost Z88 should put that right.

The Harvester Finger Organiser is a user friendly, simple and easy to understand series of 10 lessons that teaches beginners how to touch type, eventually leading up to 60 words per minute.

The lessons give training in dexterity and finger/key reflexes on the keyboard that are designed to build up speed and confidence. The on-screen display will record errors and speeds, and sets the user a continuous series of challenges.

The Finger Organiser is stored on a 32K reformatable eprom.

Recommended Retail Price £44.99

The Harvester Z88 Wordchip - Check Your Spelling

Users of the Z88's inbuilt wordprocessor, PipeDream, will welcome this new spell-check system.

The Harvester Wordchip has a fully comprehensive 70,000 wordlist compiled by William Collins Sons & Company Ltd, linguistic technology is supplied by Proximity Technology Inc.

Wordchip will correct errors such as case, dot, punctuation and typography, and uses British English rather than the more commonly used American English on this type of product.

The Harvester Wordchip is stored on a 128K reformatable eprom.

Recommended Retail Price £54.99



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